

# REPORT ON STEAM RECIPROCATING ENGINE MACHINERY.

Received at London Office  
 of writing Report 18 JUL 1929 10 When handed in at Local Office 18 JUL 1929 10 Port of London (Spaswich)  
 in Survey held at Kings Lynn + Great Yarmouth. Date, First Survey 1<sup>st</sup> Aug 1928 Last Survey 6<sup>th</sup> Jul 1929  
 Book. on the *Steel Screw Steamer "ANGEL"* (Number of Visits 20)  
 Tons { Gross 113.31  
 Net  
 When built 1929.  
 By whom built Kings Lynn Shipway Co. Ltd. Yard No. 249  
 By whom made Elliott + Garwood Ltd. Engine No. 6650 when made 1929.  
 By whom made A. Dodman & Co. Boiler No. 1167<sup>B</sup> when made 1929.  
 Port belonging to  
 m. Horse Power as per Rule 34. ✓ Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.  
 made for which Vessel is intended Fishing purposes.

GINES, &c.—Description of Engines Triple expansion  
 a. of Cylinders 8<sup>1</sup>/<sub>2</sub>"-14"-24" Length of Stroke 16" No. of Cylinders 3 No. of Cranks 3. Revs. per minute 140  
 Crank shaft, dia. of journals as per Rule 4.475" 4.629. Crank pin dia. 4.625" ✓ Crank webs Mid. length breadth 9.187" Thickness parallel to axis 3.25"  
 as fitted 4.625" ✓ Mid. length thickness 3.25" shrunk Thickness around eye-hole 2.25"  
 Intermediate Shafts, diameter as per Rule ✓ as fitted ✓ Thrust shaft, diameter at collars as per Rule 4.475" 4.629  
 as fitted ✓ as fitted 4.625" ✓  
 Tube Shafts, diameter as per Rule ✓ as fitted ✓ Screw Shaft, diameter as per Rule 5" Is the { screw } shaft fitted with a continuous liner { Yes  
 as fitted ✓ as fitted 5" ✓  
 Bronze Liners, thickness in way of bushes as per Rule 4.475" Thickness between bushes as per Rule 3.3" Is the after end of the liner made watertight in the  
 as fitted 5" as fitted 5" ✓  
 Propeller boss Yes. If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ✓  
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive ✓  
 If two liners are fitted, is the shaft lapped or protected between the liners ✓ Is an approved Oil Gland or other appliance fitted at the after  
 end of the tube shaft No Length of Bearing in Stern Bush next to and supporting propeller 26"  
 Propeller, dia. 6'-3" Pitch 7'-6" No. of Blades 4 Material Cast iron whether Moveable No Total Developed Surface 15<sup>1</sup>/<sub>2</sub> sq. feet  
 Feed Pumps worked from the Main Engines, No. one Diameter 1.875" Stroke 8" Can one be overhauled while the other is at work ✓  
 Bilge Pumps worked from the Main Engines, No. one Diameter 1.875" Stroke 8" Can one be overhauled while the other is at work ✓  
 Feed Pumps { No. and size One Duplex, 4<sup>3</sup>/<sub>4</sub>" x 3" x 5" Pumps connected to the { No. and size One Duplex, 4<sup>3</sup>/<sub>4</sub>" x 3" x 5"  
 How driven Steam Main Bilge Line How driven Steam  
 Ballast Pumps, No. and size ✓ Lubricating Oil Pumps, including Spare Pump, No. and size ✓  
 Are two independent means arranged for circulating water through the Oil Cooler ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary  
 Bilge Pumps;—In Engine and Boiler Room One, 2" dia. 1 Expector 2" dia. ✓  
 In Holds, &c. One Main engine 2" dia. One Aux pump, 2" dia. ✓ The 2" dia. Low hold. One 2" dia. Fore peak.

Main Water Circulating Pump Direct Bilge Suctions, No. and size 2<sup>1</sup>/<sub>2</sub> dia Independent Power Pump Direct Suctions to the Engine Room Bilges,  
 No. and size One, 2" dia. Are all the Bilge Suction Pipes in holds and tunnel well fitted with strum-boxes Yes  
 Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes.  
 Are all Sea Connections fitted direct on the skin of the ship Yes. Are they fitted with Valves or Cocks Valves + Cocks.  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Overboard Discharges above or below the deep water line Above  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes. Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes  
 What Pipes are carried through the bunkers None. How are they protected ✓  
 What pipes pass through the deep tanks ✓ Have they been tested as per Rule ✓  
 Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
 Is the arrangement of Valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one  
 compartment to another Yes Is the Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

MAIN BOILERS, &c.—(Letter for record S. ) Total Heating Surface of Boilers 635<sup>1</sup>/<sub>2</sub> ✓  
 Is Forced Draft fitted No ✓ No. and Description of Boilers One Single Ended. 1. SB. Working Pressure 200 lb. ✓  
 IS A REPORT ON MAIN BOILERS NOW FORWARDED? Yes  
 IS A DONKEY BOILER FITTED? ✓ If so, is a report now forwarded? ✓  
 PLANS. Are approved plans forwarded herewith for Shafting Yes Main Boilers Yes Auxiliary Boilers ✓ Donkey Boilers ✓  
 (If not state date of approval)  
 Superheaters ✓ General Pumping Arrangements Yes Oil fuel Burning Piping Arrangements ✓

SPARE GEAR. State the articles supplied:—

2 piston rod top and both Fruits. 1 spare screw shaft propeller.  
 2 bon rod bottom and both Fruits.  
 2 main bearing both Fruits.  
 1 set coupling both + nuts.  
 1 set feed + bilge pump valves.  
 A quantity of assorted bolts, nuts + rim of various sizes.

The foregoing is a correct description,  
 ELLIOTT & GARROOD, LTD. (as regards Engines)  
 Secretary. Manufacturer.



PILLARS, No. of Rows

" in 'tween D

" "

" in Holds

Centre Line Bulk  
Stiffeners and Spac

Plating, thickness

FRINGERS AND D  
Uppermost Contir  
Stringer Plate, br

Angle in

Thickness of Pl  
in way of Well

Thickness of P  
in way of Bri

Thickness of Pl

WOOD DEC  
ma

Second Deck.  
Stringer Plate,

STRAKES.

AT PLATE KEET

" DELG.

OTTOM PLATING  
of Strakes ...

LGE PLATING,  
Strakes .....

DE PLATING,  
Strakes .....

PPER DECK,  
strake in W

PPER DECK,  
strake in Br

RAKE BELOW  
strake in W

RAKE BELOW  
strake in B

OP SIDE PL

RIDGE SIDE

REC'TLE SH

otal No.

OLLIS

FTER

STEEL

Has the Steel

1928. AUG. 1. 22 SEP. 3. 28 OCT. 31 NOV. 15. DEC. 5. (1929) JAN. 9  
During progress of work in shops - -  
Dates of Survey while building  
During erection on board vessel - - -  
1929. FEB. 21. MAR. 5. 12. 22 APR. 3. 8. 19. MAY 1. JUNE 4. 26. 27. JUL. 6  
Total No. of visits 20

Dates of Examination of principal parts - Cylinders 28.9.28. 31.10.28. 15.11.28. Slides 28.9.28. Covers. 28.9.28.  
Pistons 28.9.28. Piston Rods 31.10.28. Connecting rods 31.10.28.  
Crank shaft 15.11.28. 5.12.28. Sub-Thrust shaft 5.12.28. Intermediate shafts ✓  
Tube shaft ✓ Screw shaft 15.11.28. 5.12.28. Propeller 5.12.28. 12.3.29.  
Stern tube 5.12.28. 12.3.29. Engine and boiler seatings 22.3.29. Engines holding down bolts 22.3.29.  
Completion of pumping arrangements 4.6.29. Boilers fixed 22.3.29. Engines tried under steam 4.6.29. 27.6.29.  
Main boiler safety valves adjusted 4.6.29. Thickness of adjusting washers P 3/16 S. 3/16  
Crank shaft material Steel Identification Mark No 2670 A.B. Thrust shaft material Steel Identification Mark 859 A.B.  
Intermediate shafts, material ✓ Identification Marks ✓ Tube shaft, material ✓ Identification Mark ✓  
Screw shaft, material Steel Identification Mark No 860 A.B. Steam Pipes, material Steel Test pressure 600 lb. Date of Test 19.4.29.  
Is an installation fitted for burning oil fuel ✓ Is the flash point of the oil to be used over 150°F. ✓  
Have the requirements of the Rules for carrying and burning oil fuel been complied with ✓  
Is this machinery duplicate of a previous case ✓ If so, state name of vessel ✓

General Remarks (State quality of workmanship, opinions as to class, &c.)  
The machinery of this vessel has been constructed under Special Survey in accordance with the approved plans, + the rules of this Society, the materials + workmanship are good. the main steam pipes has been hydraulic tested + found sound + good. The engines tried under working conditions, + the safety valves adjusted to blow at 205 lb. sq. in.  
In my opinion the vessel is eligible for the record of + L.M.C. 7.29.

It is submitted that  
this vessel is eligible for  
THE RECORD.  
+ L.M.C. 7.29. C.L.

J. R. 23.7.29

The amount of Entry Fee £ 2.0.0  
Special BOILER Fee £ 11.0.0  
Donkey Boiler Fee £ 6.16.0  
Travelling Expenses (if any) £ 4.8.6  
When applied for, 19 JUL 1929  
When received, 26.7.29  
A.B. Larmine  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
FRI. 26 JUL 1929

Assigned  
+ L.M.C. 7.29  
C.L.